Transplant, Misc GU Cancers & Bladder Reconstruction (non-cancer)

Video 11

Sunday, May 17, 2020 **1:00 PM-3:00 PM**

V11-01
TESTICULAR TRANSPLANT IN MAN. WHOLE ORGAN TRANSPLANT. HISTORIC VIDEO 1978

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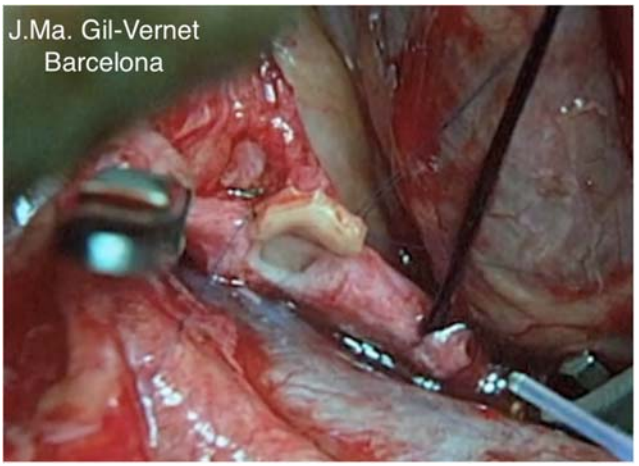
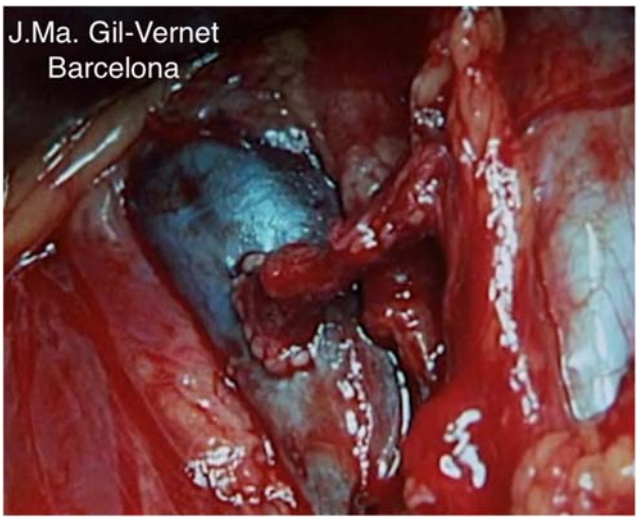
INTRODUCTION AND OBJECTIVE: We present a historic video of a whole organ transplant of the testicle in man with the full surgical technique, including both artery (Fig. 1) and vein anastomosis (Fig. 2), as well as the vas deferens reconstruction (Fig. 3). We believe it is the only testicular transplant as a whole organ of testicle ever made. It was done on November 1978.

METHODS: A cadaveric testicle was transplanted into a 21-year old patient who had lost both testicles three years before due a non-specific infectious process. According to his Psychiatric evaluation, ever since, he suffered from grave obsessional neurosis. The same technique developed by Prof. JM[a] Gil-Vernet in 1970 experimentally was used. Warm and cold isquemia on testicular parenquima were investigated, the various methods of preservation of the organ, the gonadotrophic response was studied as well as different immune suppressant agents used in different dosages.

RESULTS: The testicle was rejected three weeks later probably due to the host versus graft response in spite of all the ultimate knowledge available at that time as well as immunosupressant agents of the period.

CONCLUSIONS: The great advances in histocompatibility and immunosuppression of today, combined with this detailed description of the technique for such a complex organ transplantation, will deliver improved results in the very special and selected case.





Source of Funding: None.

V11-02
TOTALLY INTRACORPOREAL ROBOT-ASSISTED KIDNEY AUTO-TRANSPLANTATION

Charles Van Praet, Benjamin Van Parys, Liesbeth Desender, Karel Decaestecker, Ghent, Belgium*

INTRODUCTION AND OBJECTIVE: Kidney auto-transplantation can be performed in patients with complex renal or ureteral pathology not suitable for in situ reconstruction, such as renal vasculature anomalies, patients with proximal or long complex ureteral strictures or complex oncological cases. Robot-assisted surgery allows for a high-quality vascular and ureteral anastomosis and faster patient recovery. Robot-assisted kidney auto-transplantation (RAKAT) is performed in 2 phases: nephrectomy and pelvic transplantation. In-between, extraction of the kidney allows for vascular reconstruction or kidney modification on the bench and safe cold ischemia can be established. If no bench reconstruction is needed, totally intracorporeal RAKAT (tiRAKAT) is feasible. One case report in Europe has been described, however, to our knowledge no surgical video is available. In our surgical video, we demonstrate the procedure with attention to patient and trocar positioning, establishing intracorporeal cold ischemia and the advantages of the DaVinci Xi system with boom rotation for this specific procedure.

METHODS: A 58 year old woman suffered from right distal ureter stenosis following pelvic radiotherapy 10 years prior for cervical cancer. A double J stent was placed, but she suffered from recurrent urinary tract infections and ultimately a nephrostomy was placed. Renogram demonstrated 43% relative right kidney function. As her bladder volume was low following radiotherapy, no Boari flap was

possible and the patient refused life-long nephrostomy and nephrectomy. Therefore, tiRAKAT was performed, using the DaVinci Xi system.

RESULTS: Surgical time (skin-to-skin) was 5 hours and 45 minutes. Warm ischemia time was 4 minutes, cold ischemia 55 minutes and rewarming ischemia 15 minutes. The abdominal catheter and bladder catheter were removed on the first and second postoperative day, respectively. The double J stent was removed after 3 weeks. The patient suffered from pulmonary embolism on the second postoperative day, for which therapeutic low molecular weight heparin was started. No further complications occurred during the first 30 postoperative days.

CONCLUSIONS: We demonstrated feasibility and, for the first time, a surgical video of tiRAKAT highlighting patient positioning and trocar placement and intracorporeal cold ischemia technique.

Source of Funding: None.

V11-03

SUCCESSFUL OPEN SURGICAL IN VIVO REPAIR OF A COMPLEX TRANSPLANT RENAL ARTERY ANEURYSM (TRAA)

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INTRODUCTION AND OBJECTIVE: De novo transplant renal artery aneurysm (TRAA) is a rare (0.3%) complication and if left untreated can lead to devastating complications and allograft loss. This video of open surgical excision and vascular bypass of a TRAA illustrates the importance of pre-operative planning and novel techniques.

METHODS: A 30-year-old lady underwent an uncomplicated living related renal transplant in 2006 on the right side. Routine ultrasound in 2018, incidentally detected a saccular TRAA. Her estimated glomerular filtration rate (eGFR) was 57ml/min. CT angiogram with 3D reconstruction confirmed a 2.6 x 2.2 cm wide neck saccular TRAA arising from the anterior segmental branch, distal to the posterior segmental branch origin, but proximal to branches supplying the mid and upper pole. The short take-offs excluded safe radiological endovascular stenting. There was no clinical evidence of mycotic aneurysm. Pre-operative planning dictated a midline transperitoneal approach to provide direct access to the anteriorly positioned TRAA, the iliac vessels and allograft hilum without mobilizing the allograft. The iliac vessels were first secured proximal and distal to the single arterial anastomosis. TRAA was then dissected down to the aneurysmal neck with its connected branches. Renal vein was dissected too. Right saphenous vein graft was harvested and prepared by anastomosing it to right common iliac artery. Based on segmental clamping partial nephrectomy principles, in vivo excision of the TRAA was performed after suture ligation of anterior segmental arterial origin and clamping of the distal branches. With renal vein and posterior segmental branch unclamped, the rest of the kidney remained perfused. The prepared saphenous vein graft was then anastomosed to the distal divided end of the anterior segmental arterial branch.

RESULTS: Total operative time was 148 minutes. Estimated blood loss was 500ml. Hospital stay was 5 days. Total warm ischemic time was 20 min. Post-operative renal function was normal and after 6 months. Follow up scans showed no TRAA recurrence.

CONCLUSIONS: Careful pre-operative planning enabled a direct approach to the aneurysm with its excision under segmental arterial clamping and repair with vein graft. This in turn helped to achieve a rapid and complete allograft function recovery.

Source of Funding: Self funded

V11-04

INNOVATIONS AND TECHNICAL VARIATIONS IN ROBOT-ASSISTED KIDNEY TRANSPLANTATION: RESULTS FROM THE ERUS WORKING GROUP

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INTRODUCTION AND OBJECTIVE: The aim of the study is to report the European experience on surgical variations and technical innovations in robot-assisted kidney transplantation (RAKT).

METHODS: The patient is placed in the lithotomy and Trendelenburg (20°-30°) position. On the bench table, a double-J ureteral stent is inserted, and the graft is wrapped in a gauze filled with ice slush. The anterior wall of the artery is shortened to avoid its kinking after kidney rotation into the peritoneal pocket. The positioning of the ports resembles the W-shaped scheme for robot-assisted radical prostatectomy. The difference is represented by the port for arm 3, to be placed on the intersection between the line joining the pubis to arm 4 and the umbilicus−anterior superior iliac spine line.After dissection of the exterior iliac vessels, a transverse incision of the peritoneum is done above the level of the appendix for graft retroperitonealization. The GelPOINT® is placed through a periumbilical or Pfannenstiel incision; the graft is inserted into the abdominal cavity. In selected cases, the graft may be inserted transvaginally. The AirSeal® system might be used to maintain the pneumoperitoneum at 8 mmHg. The graft renal vein is anastomosed in an end-to-side continuous fashion to the external iliac vein using a 6/0 Gore-Tex®, as for the arterial anastomosis. The arteriotomy is performed at 1 o'clock to reduce the risk of arterial kinking. The first knot at the caudal angle of the arterial anastomosis is tied after passing the needle through the graft artery in outside-inside fashion to start the suture. A double graft artery may be anastomosed on the bench or separately. Once the graft has been rotated for retroperitonealization, vascularization of the graft can be evaluated with the FireFly™ fluorescence as for the ureter, which is crucial to avoid ureteral stenosis. Ureteroneocystotomy is performed according to the Lich-Gregoir technique.

RESULTS: Intraoperative complications occurred in 8/183 (4.4%). Postoperative Clavien-Dindo grade III/IV complications were reported in 11/183 (6%) cases, the majority during the first ten RAKTs in each Center (7/11, 64%). Three graft losses occurred during the first ten procedures, all because of arterial thrombosis; none were reported after 10 surgeries (3/183; 1.6%; $p = 0.02$). Mean eGFR on postoperative days 7, 30 and at 1 year were 54 ($\pm$22), 57 ($\pm$21), 58 ($\pm$18) ml/min/1.73 m2, respectively.

CONCLUSIONS: RAKT is a safe and feasible surgery which innovations and technical variations are permitting to expand its indications.

Source of Funding: none

V11-05

RENAL VEIN TRANSPOSITION WITHOUT VENOUS OUTFLOW OCCLUSION

Kyle Rose, Matthew Breite, Victor Davila, Erik Castle, Phoenix, AZ*

INTRODUCTION AND OBJECTIVE: Robot assisted transposition of the renal vein has been described for Nutcracker Syndrome. Unfortunately, surgical repair requires clamping of the venous outflow of the kidney via the left renal vein, which may cause renal parenchymal injury. Our objective was to perform transposition of the renal vein while providing continuous venous outflow from the kidney to avoid venous congestion and renal parenchymal injury.

METHODS: A thirty-two year old female with one-year history of left flank pain and inability to walk upright due to this pain. Her